NovaCHARGE
Empowering The Future™

NovaCHARGE 8000 Series
EV Charger-40A

INSTALLATION MANUAL

SAVE THESE INSTRUCTIONS

Need Help?

Contact the NovaCHARGE® support team at 866-417-9995 or support@NovaCHARGE®.net.

Date of Purchase: _____

Installation Location: _____

_____

Rev 11/2022

IMPORTANT SAFETY INSTRUCTIONS

This document contains instructions and warnings that must be followed when installing and using the NovaCHARGE 8000 EV Charger. Before installing or using the NC8000, read this entire document as well as WARNING and CAUTION markings in this document.

Safety Instructions

The symbols used have the following meaning:


WARNING: RISK OF PERSONAL INJURY


WARNING: RISK OF ELECTRIC SHOCK


WARNING: RISK OF FIRE


CAUTION: RISK OF DAMAGE TO THE EQUIPMENT

- The NovaCHARGE 8000 must be installed only by licensed electricians.
- Make sure that the materials used and the installation procedures follow local building codes and safety standards.
- The information provided in this manual in no way exempts the user of responsibility to follow all applicable codes or safety standards.
- This document provides instructions for the NC8000 and should not be used for any other product. Before installation or use of this product, review this manual carefully and consult with a licensed contractor, licensed electrician, or trained installation expert to make sure of compliance with local building codes and safety standards.

Repair and Maintenance Clause

- Only licensed electricians can repair or maintain the NC8000. It is forbidden for general users to repair or maintain it.

- Turn off input power before repair or maintenance the NC8000.

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 20cm between the radiator & your body.

Industry Canada statement:

This device complies with ISED's license-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 20cm between the radiator & your body.

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à plus de 20 cm entre le radiateur et votre corps.

WARNING: RISK OF ELECTRIC SHOCK

When using electric products, basic precautions should always be followed, including the following. This manual contains important instructions that shall be followed during installation, operation and maintenance of the unit.

- Read all the instructions before using this product.
- This device should be supervised when used around children.
- Do not put fingers into the EV connector.
- Do not use this product if the flexible power cord or EV cable is frayed, has broken insulation, or any other signs of damage.
- Do not use this product if the enclosure or the EV connector is broken, cracked, open, or shows any other indication of damage.
- To avoid a risk of fire or electric shock, do not use this unit with an extension cord.

WARNING: RISK OF ELECTRIC SHOCK

Improper connection of the equipment grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded.

Do not modify the plug provided with the product – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

WARNING: RISK OF ELECTRIC SHOCK
Do not remove the cover or attempt to open the enclosure. No user serviceable parts inside. Refer servicing to qualified service personnel.

WARNING: RISK OF ELECTRIC SHOCK

- Do not touch live electrical parts.
- Incorrect connections may cause electric shock.
- Do not Disconnect Under Load.

WARNING: This equipment is intended only for charging vehicles that do not require ventilation during charging. Please refer to your vehicle's owner's manual to determine ventilation requirements.

WARNING: Do not use extender cables to increase the length of the charging cable. Maximum length is limited to 25 feet by the National Fire Protection Agency.

WARNING: Do not drag the NC8000 by input power cord.

CAUTION: Do not expose to liquid, vapor or rain.

CAUTION: If this unit is installed outdoors, the outlet must be rated for outdoor installation. The outlet must be installed properly to maintain the proper NEMA rating of the enclosure.

- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- Do not touch the terminals or other current-carrying parts.
- Take care not to drill into any pipes or power lines beneath the surface during mounting holes preparation. Use power line / metal detector.
- Do not trample or drive over the product's cables.
- Do not put any foreign objects into the enclosure.
- Do not start the engine when the charging connector is still connected.

CAUTION: Do not use this product if there is any damage to the unit. Send the unit back to the manufacturer in the event the unit is not operational.

SAVE THESE INSTRUCTIONS

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1 Introduction

This user manual applies to “the NovaCHARGE 8000 Series 40A Level 2 AC EV Charger” for Plug-in Electric Vehicles (PEVs) and Battery Electric Vehicles (BEVs)”.

The Level 2 Electric Vehicle Supply Equipment (NC8000) with 40A capabilities will be used in North America.
It can provide a shorter charging time than the traditional 32A NC8000.

Any unauthorized modifications will void the manufacturer’s warranty.

1.1 Product view

Figure 1-1 Front view

Box Contents

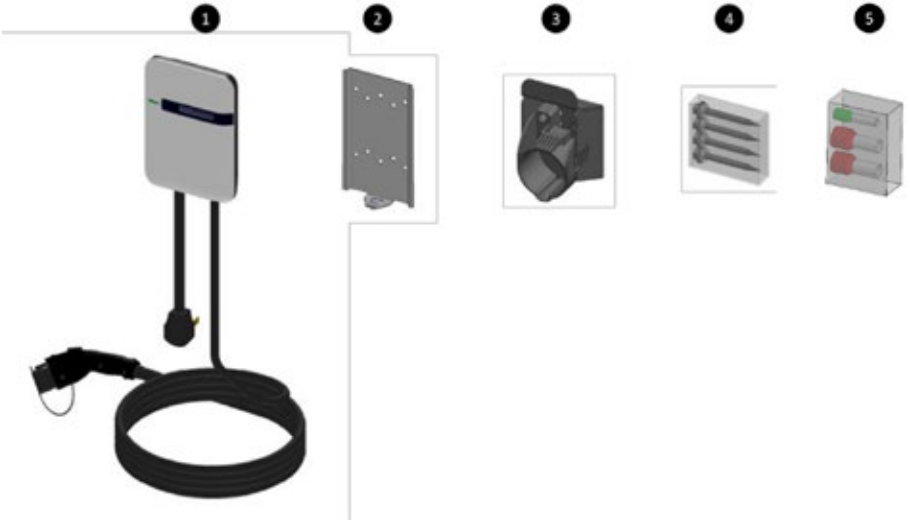

Figure 1-2 Box contents

Table 1-1 Accessories in the box

	Description	QTY	Remark
	NC8000 Series-80A (Hardwire)		☐ ■ Charging Plug ☐ Input Power Cord ☐ ■ OLED Display ☐ ■ RFID Icon
2	Mounting Bracket	1	Attached to the back of the NC8000
3	Holster ASSY	1	With Hook x1, Holster x1 & M4xL15 tapping screw x2
4	Screw Bag	1	With #12xL50 tapping screw x4
5	Accessories bag	1	6 AWG x 2, 10 AWG x 1 ferrule sleeve terminals

Box Opening Process

1. Open the carton and remove the upper partition.

Figure 1-3 Opening the carton

Figure 1-4 NC8000 device

2. Take out the NC8000 and upturn middle partition. The charging plug is in the bottom of the carton.

Figure 1-5 Take out the NC8000

Figure 1-6 Charging plug

3. The hook and holster are placed inside the right of the middle partition.

Figure 1-7 Accessories inside the middle partition

Figure 1-8 Hook and holster

4. Release the bottom screw, then the wall mounting bracket can be removed.

Figure 1-9 Release the screw

Figure 1-10 Remove the mounting bracket

2 Specifications

2.1 Product specifications

Table 2-1 Product specifications

Item		SC40A	SC40A+	IC40A
Application		Residential	Commercial	Commercial
Voltage (Vac)	208/240VAC, Single Phase			
Frequency (Hz)	60 Hz			
Current (Rms)	40 A			
Charging Connector	SAE J1772 Type 1			
Charging Cable Length	25 ft. (18 ft. optional)			
Metering Accuracy		Embedded ± 1%		
Real Time Clock		Yes (min. 7 days)		
Protection	Over Voltage, Under Voltage, Surge Protection, GM/I, CCID20, Over Current, Over Temperature, Under Temperature, Short Circuit, Relay Malfunction/Welding Protection			
Wi-Fi		802.11 b/g/n		
Ethernet		Yes		
Cellular	N/A			LTE Cat. 1 (AT&T or Verizon)
RFID	N/A		ISO 14443 A/B, ISO 15693, NEMA interoperability protocol	
Display		5*8 DOT MATRIX		
Data Protocol		OCPP 1.6J		
Operation Temp.	-30~50℃/-22~122℉			
Storage Temp.	-40 ~ 70℃ / -40 ~ 158 ℉			
Mounting Type	Wall mount / Pole mount (optional)			
Wiring Type		Hard-wired		

2.1 Product specifications (con't)

Item		SC40A	SC40A+	IC40A
IP Performance	NEMA 4			
Impact Resistance	IK10			
Dimension (H x W x D, inch)	11.14” x 7.56” x 3.11”			
Weight	< 6kg			
Web Portal Management		Yes		
Console Management	Yes			
Certification	UL 1998/2231/2594 FCC Part 15B			
		FCC Part 15.247	FCC Part 15.225, FCC Part 15.247	
		Energy Star		FCC Part 27, Energy Star

3 Installation

3.1 Before installation

3.1.1 Safety check

- Check for transport damages.
- Before connecting the product to the power supply, check that the power supply voltage and current rating corresponds with the power supply details shown on the product rating label.

CAUTION: Disconnect the power supply before installing or repairing the NC8000. Failure to do so may result in physical injury or damage to the power supply system and the NC8000.

CAUTION: Avoid touching or pressing the OLED screen all times, as this may result in damage to the OLED screen.

DANGER: RISK OF SUFFOCATION

Keep any packing materials away from children – these materials are a potential source of danger, e.g. suffocation.

The NC8000 must be installed only by a licensed electrician in accordance with the provisions of the local electrical industry construction and should comply with national electrical codes and standards.

Before installing the NC8000, make sure you have read all of these instructions in this manual and fully understand its contents.

Appropriate protection is required when connecting to a main switchboard. The tools and parts used as outlined in the section “Tools & parts required for installation”.

3.1.2 Grounding instructions

The NC8000 must be implemented equipment grounding through a permanent wiring system or an equipment grounding conductor. Use a wire with a dedicated grounding wire and a ring terminal and connected to the equipment ground terminal block for grounding.

3.2 Tools & parts required for installation

Table 3-1 Tools & parts required for installation

Tool	QTY	Model	Size	Supplier	Remark
Mounting Bracket	1	All	194x109x9 mm	Model Accessories	Fasten NC8000 to the wall
Holster ASSY	1	All	58x58x70 mm	Model Accessories	Hold EV charging plug
Screw	4	All	Tapping: #12	Model Accessories	Fasten Mounting Bracket & Hook
			Mechanical: M6	Commercially Available	
Wire, Copper	3	IC3	6 AWG	Commercially Available	
Terminal	3	IC3	For 6 AWG wire	Commercially Available	Connect input wires to the terminal block
Conduit	1	IC3	1 inch	Commercially Available	Protect power cable
Torx Screwdriver	1	All	T20	Commercially Available	
Philips Screwdriver	1	All	PH3	Commercially Available	
Hexagon Socket	1	All	5/16	Commercially Available	Tighten #12 Tapping screws
Torque Wrench	1	All	35 kgf-cm min	Commercially Available	

3.3 Install the Ethernet Cable

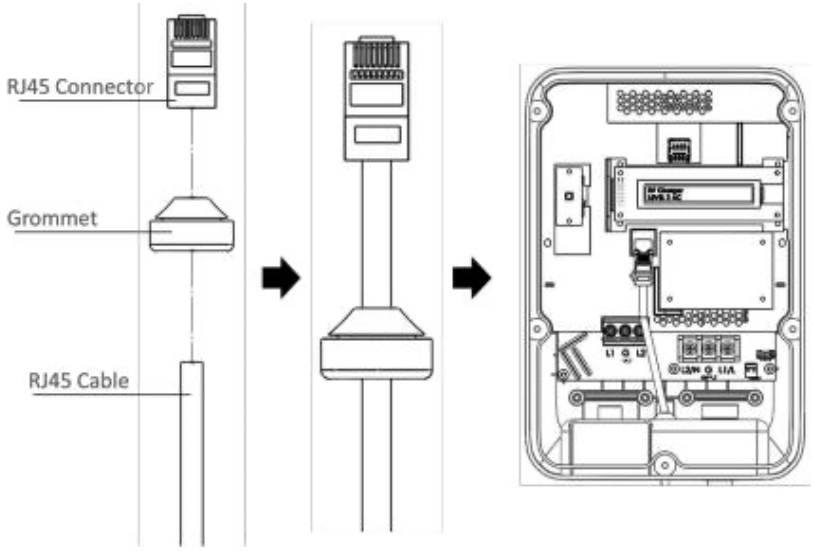

Figure 3-8 Ethernet connection procedure

Steps of install the Ethernet cable:

1. Insert RJ45 cable through grommet that is fixed on the bottom cover.
2. Use tools to combine the RJ45 connector with RJ45 cable.
3. Put the RJ45 connector in the ethernet RJ45 socket.

3.4 Install the NC8000

1. **Secure the main body mounting bracket to the wall with appropriate screw.**

DANGER: Disconnect power at the circuit breaker before installation.

CAUTION: Before mounting determine the suitable mounting location. The unit must be fixed to a wooden or masonry/concrete wall using hardware that is appropriate for the surface. Do not install on drywalls, wall boards or thin plywoods. The fixing point must be capable of supporting the weight of the unit.

Follow applicable accessibility requirements for the mounting position. The unit shall be stored or located at a sufficient height.

For indoor use: The unit shall be mounted at a sufficient height from the floor between 18 inches (450 mm) and 4 feet (1.2m).

For outdoor use: The unit shall be mounted at a sufficient height from the floor between 24 inches (600 mm) and 4 feet (1.2m).

The mounting bracket has ten screw holes. If only two screws be used to fasten the mounting bracket, the screws should pass through the middle two screw holes of the mounting bracket. The other screw holes are reserved for the user.

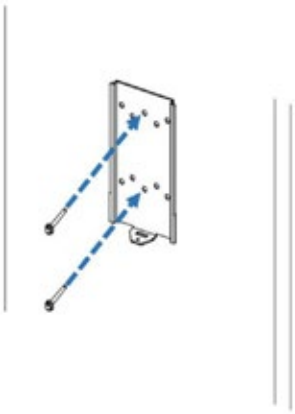

Figure 3-9 Fixing mounting bracket

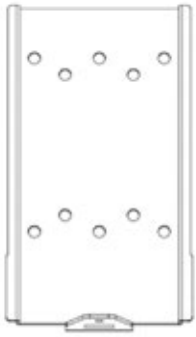

Figure 3-10 Screw holes of mounting bracket

Screw suggestion:

a. For masonry walls, use M6 mechanical screws. (Commercially available)
b. For finished walls supported by wood studs, use 1/4”or M6 tapping screws. (Commercially available)
c. Please use following torque force.

Screw	Torque	
M6	25 kgf.cm min	21.7 lb-in min
#12	25 kgf.cm min	21.7 lb-in min

2. Mount NC8000 onto mounting bracket and lock the screw.

2-1. Put the NC8000 on the mounting bracket.

2-2. Fix NC8000 on mounting bracket by M4 screw and screw washer.

2-3. Please refer to the following torque.

Screw	Torque	
M4	16 kgf.cm	13.88 lb-in

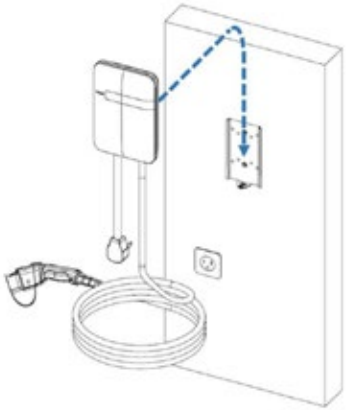

Figure 3-11 NC8000 and mounting bracket

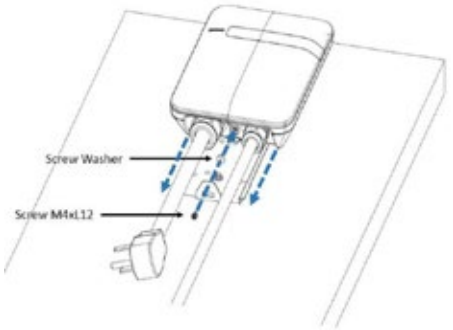

Figure 3-12 Screw locking position

3. Plug in the power cord. (BC3/SC3 ONLY)

The outlet should be located at 20-26 inch from the ground. Refer to the installation template to decide where to install the NC8000.

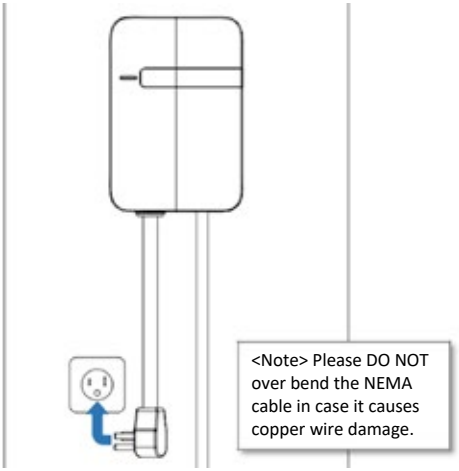

Figure 3-13 Plug in the power cord

3.5 Input cord connection

1. Choose the appropriate conduit in accordance with all applicable state, local and national electrical codes and standards.

Figure 3-14 Conduit.

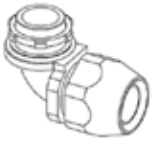

Figure 3-15 Right angle conduit

2. Clamp copper sleeve terminal to connect copper wire

2-1 Refer to the following wire specification. Use hand tool to cut the outer layer of wire and left around 12mm length for connecting copper sleeve terminal.

Model	Terminal	Conductor	Rating
Intelligent Charger-40A	L1, L2	6 AWG	90C copper wire
	G	10 AWG	90C copper wire

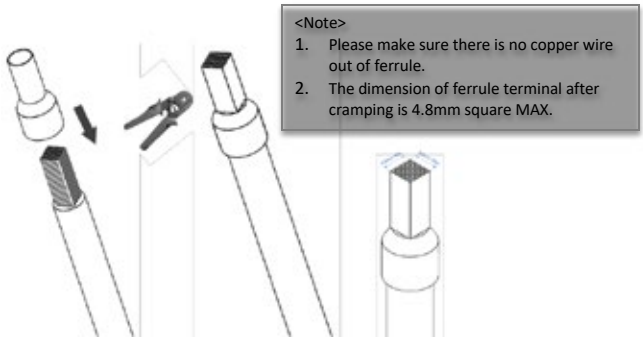

Figure 3-16 Connect copper sleeve terminal to wire

3. Electrical wiring to the NC8000.

3-1. Disassemble top cover.

3-2. Use Philips screwdriver to release terminal screws.

3-3. Fold the wire end to pass through the conduit and insert them into the input hole.

3-4. Fix the copper wire on the corresponding terminal block. The wiring instruction is printed in front of the terminal block (L1/L2/G).

3-5. Use the following torque to connect the wire terminal to the terminal block.

Screw	Torque	
	1.2 N-m	10.62 lb-in

3-6. The recommended terminal specifications are as following.

Terminal	#6AWG Dimension(mm)	#10AWG Dimension(mm)
F	12	12
L	24	20
W	8.8	6.3
B	10	8.5
D	6.2	3.9
C	5.8	3.5

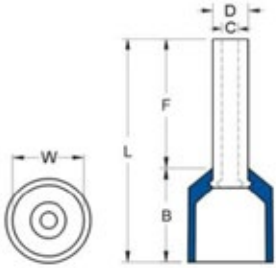

Figure 3-17 Dimension of terminal

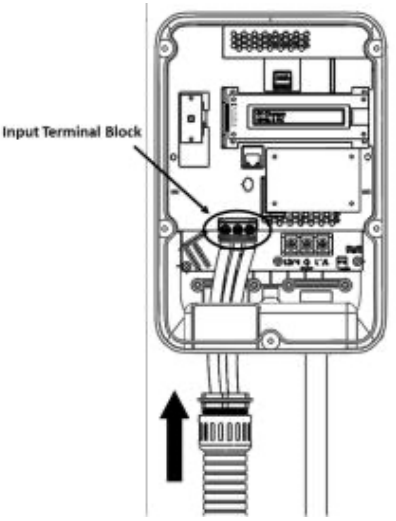

Figure 3-18 Input wiring

⚠ CAUTION: To reduce the risk of fire, connect only to a circuit provided with 40 amperes maximum branch circuit overcurrent protection in accordance with the National Electrical Code, ANSI/NFPA 70, and the Canadian Electrical Code, Part I, C22.1.

⚠ CAUTION: If this unit is installed outdoors, the outlet must be rated for outdoor installation. The outlet must be installed properly to maintain the proper NEMA rating of the enclosure.

Model	Current Rating
Intelligent Charger-40A	40 A

3-7. Lock the conduit on the enclosure. Please refer to the following torque.

Conduit	Torque	
1 "	35 kgf.cm	30.36 lb-in

3-8. Reassemble top cover. Please refer to the following torque.

Screw	Torque	
M4	16 kgf.cm	13.88 lb-in

3.6 Install the Holster

1. **Separate the holster from hook.**

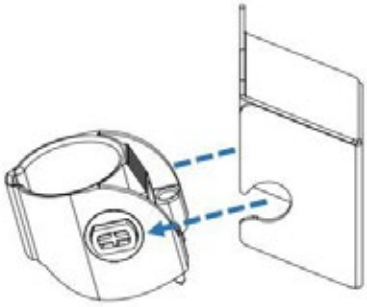

Figure 3-19 Separate the holster

2. **Fasten the hook on the wall with appropriate screws.**

2-1. For finished walls supported by wood studs, use #12 tapping screws (x2).

2-2. The recommend torque is 25 kgf.cm (21.7 lb-in).

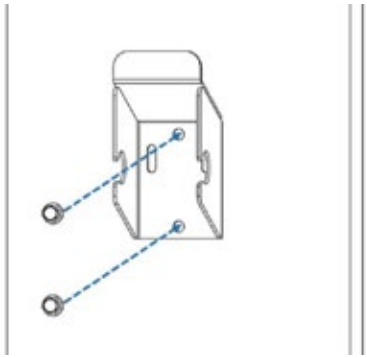

Figure 3-20 Secure the hook

3. Make the holster face up and combine with the hook.

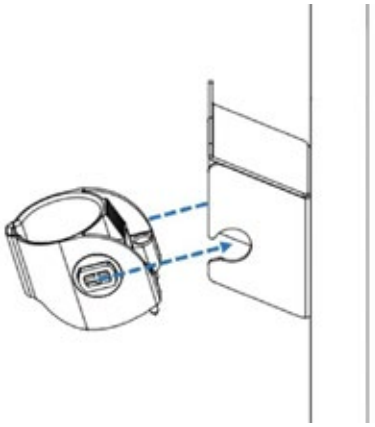

Figure 3-21 Secure the holster

4. Rotate the holster down totally.

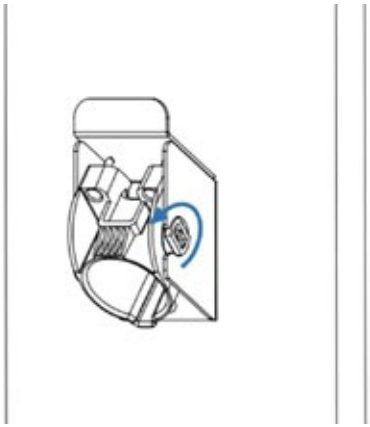

Figure 3-22 Rotate the holster

5. Keep the holster in this state and tighten screws completely.

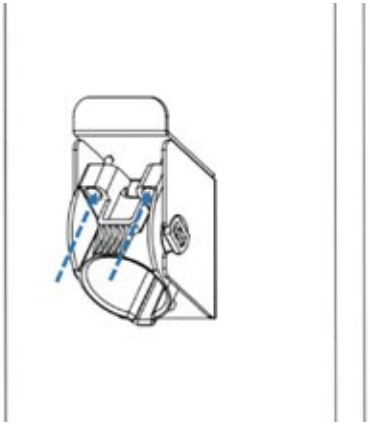

Figure 3-23 Lock screws

6. Place EV charging plug on the holster.

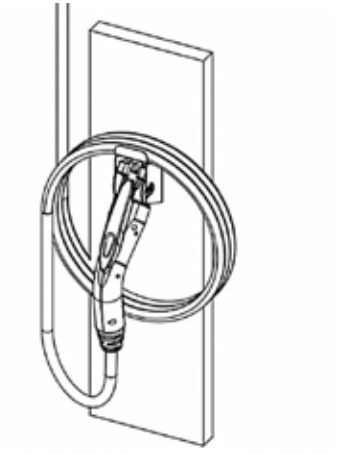

Figure 3-24 Place EV charging plug.

4 Operations

4.1 Charging status indicators

Table 4-1 Charging status indicators

Yellow Steady	Power On/Device Out of Service
Yellow Flashing (Slow)	Power On/Device Booting/Not Ready
Green Steady	Power On/Device Available/Ready
Green Flashing (Fast)	Authorized/Connect Vehicle Now (State A)
Green Flashing (Slow)	Occupying (State B)
Blue Flashing (Slow)	Charging (State C)
Red Steady	Unrecoverable Fault
Red Flashing (Slow)	Recoverable Fault
	Fast Flash: On Time 300ms, Off Time 200ms, 2Hz Slow Flash: On Time 1200ms, Off Time 800ms, 0.5Hz

4.2 General care

The exterior of the NC8000 is designed to be waterproof and dust proof. To ensure proper maintenance of the NC8000, follow these guidelines:

- Despite the water resistance of the enclosure, when cleaning it is preferred to not direct streams of water at the unit. Clean with a soft, damp cloth.
- Make sure the charging plug is put back in the holster after charging to avoid damage.
- Ensure the power cable is stored on the NC8000 after use to avoid damage.
- If the power cable or the charging plug is damaged, please contact Customer Support.

4.3 Customer support

Contact the NovaCHARGE support team at 866-417-9995 or support@novacharge.net.

Congratulations!

You have successfully completed the installation of the NovaCHARGE 8000 Series EV Charger–40A

- NOTES -

US Toll Free: (866) 417-9995 • 1 (813) 333-1119

www.NovaCHARGE.net